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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,655

11/16/2005

Masanori Naritomi

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04/01/2011

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EXAMINER

KRUER, KEVIN R

ART UNIT

PAPER NUMBER

1787

NOTIFICATION DATE

DELIVERY MODE

04/01/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No. 10/533,655	Applicant(s) NARITOMI ET AL.	
	Examiner KEVIN R. KRUER	Art Unit 1787	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6 and 8-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6 and 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/28/2011 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1, 2, 8, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kallenbach (US 5,212,214) in view of Gajda ("Anisotropic etching of silicon in hydrazine") and Gehlhaar et al (US 4,547,274)—as evidenced by US 4,171,563 and Intelligent Sensors (1996).

Kallenbach teaches a substrate coated with an arylene sulfide composition comprising ceramic micro-sphere filler (herein relied upon to read on the claimed powder filler) (abstract). The particles may comprise silica (col 9, lines 60+). The substrate may comprise aluminum or aluminum alloys (col 9, lines 24+). Alternatively,

it would have been obvious to utilize an aluminum-alloy rather than an aluminum substrate in order to improve the properties of the substrate layer.

Kallenbach does not teach the claimed pretreatment. However, Gajda teaches hydrazine acts as an etchant on aluminum substrates (see abstract). Etchant treatments are known to improve adhesion of metal to plastics by roughening the surface of the metal (see US 4,171,563). Thus, it would have been obvious to the skilled artisan to pre-treat the aluminum alloy with hydrazine in order to improve the adhesion between the substrate and the polyarylene sulphide coating. Note, the use of hydrazine as an etchant is a basic reaction (Intelligent Sensors, pages 49-50).

Gajda does not teach the claimed time, temperature and concentration limitations. However, Gehlhaar teaches the concentration and temperature of an etching solution depends upon etching time and required surface roughness but the concentration usually ranges from 1-50%, the temperature from 20-90C, and the time from 10 seconds to 4minutes. Thus, it would have been obvious to optimize the time, temperature, and concentration of the hydrazine etchant solution in order to optimize the surface roughness of the aluminum substrate- thus, enhancing the adhesion between the substrate and the plastic coating.

4. Claims 1, 2, 5, 6, and 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haak (US 20010036559) in view of Gajda ("Anisotropic etching of silicon in hydrazine") and Gehlhaar et al (US 4,547,274)—as evidenced by US 4,171,563; Intelligent Sensors (1996); and Madden ("An AES investigation of aluminum, AL oxide, and AL nitride thin films").

.Haak teaches a substrate coated with an arylene sulfide composition (0016) comprising long fibers (abstract). The fibers may comprise glass fibers (0016). The substrate may comprise aluminum or aluminum alloys (claim 6). Alternatively, it would have been obvious to utilize an aluminum-alloy rather than an aluminum substrate in order to improve the properties of the substrate layer. The laminate is made by injection molding (0020-0022).

Haak does not teach the claimed pretreatment. However, Gajda teaches hydrazine acts as an etchant on aluminum substrates (see abstract). Etchant treatments are known to improve adhesion of metal to plastics by roughening the surface of the metal (see US 4,171,563). Thus, it would have been obvious to the skilled artisan to pre-treat the aluminum alloy with hydrazine in order to improve the adhesion between the substrate and the polyarylene sulphide coating. Note, the use of hydrazine as an etchant is a basic reaction (Intelligent Sensors, pages 49-50).

Gajda does not teach the claimed time, temperature and concentration limitations. However, Gehlhaar teaches the concentration and temperature of an etching solution depends upon etching time and required surface roughness but the concentration usually ranges from 1-50%, the temperature from 20-90C, and the time from 10 seconds to 4minutes. Thus, it would have been obvious to optimize the time, temperature, and concentration of the hydrazine etchant solution in order to optimize the surface roughness and enhance the adhesion.

With regards to claim 14, Madden teaches the hydrazine will result in the complete nitriding of Al films.

Response to Arguments

Applicant's arguments filed 1/28/2011 have been fully considered but they are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN R. KRUER whose telephone number is (571)272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin R Krueer/
Primary Examiner, Art Unit 1787

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